

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MICHAEL D. WALLACE  
and RONALD J. MONTGOMERY

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Appeal No. 2002-2230  
Application 09/295,547

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ON BRIEF

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Before COHEN, ABRAMS, and MCQUADE, Administrative Patent Judges.  
MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Michael D. Wallace et al. appeal from the final rejection (Paper No. 15) of claims 1 through 10, 12 through 21 and 32, all of the claims pending in the application.

THE INVENTION

The invention relates to "an apparatus and method for folding a back flap on a moving carton or other article" (specification, page 2). Representative claim 1 reads as follows:

1. A method of determining when to trigger a hook for folding a back flap of a moving carton such that the hook strikes the back flap at a strike point for folding, comprising:

receiving a cam profile representing a pattern of rotation of the hook from a start position to an ending position in order to strike the back flap at the strike point and to fold the back flap;

automatically generating from the cam profile a cam cycle representing electronic control signals for velocity, acceleration, and phase positioning of a motor controlling the hook in order to execute the cam profile; and

storing the cam cycle for use in controlling rotation of the hook to fold the back flap.

#### THE PRIOR ART

The references relied on by the examiner to support the final rejection are:

Genoud et al. (Genoud)	4,747,813	May 31, 1988
Reuteler	5,782,734	Jul. 21, 1998

#### THE REJECTION

Claims 1 through 10, 12 through 21 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Genoud in view of Reuteler.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 18 and 21) and to the examiner's answer (Paper No. 19) for the respective positions of the appellants and the examiner regarding the merits of this rejection.

#### DISCUSSION

##### I. Grouping of claims

For purposes of the appeal, the appellants have grouped claims 1 through 10, 12 through 21 and 32 together (see page 3 in

the main brief). Consistent with this grouping, and pursuant to 37 CFR § 1.192(c)(7), we shall decide the appeal on the basis of representative claim 1 alone, with claims 2 through 10, 12 through 21 and 32 standing or falling with claim 1.

## II. The merits

Genoud, the examiner's primary reference, discloses an apparatus for folding a rear flap 1, 6, on a box blank 2, 9, moving in a direction 3, 10, through the apparatus (see Figures 1 and 2). As best shown in Figures 5 through 8, the apparatus includes a cradle 38, a stepping motor 64 for moving the cradle in a path perpendicular to the path of the blank, a rotatable folder 11 comprising two hook members 13, 14 disposed on a drive shaft 12 mounted on the cradle, a stepping motor 24 for adjusting the position of the hook members along the length of the drive shaft, a drive motor 47 for rotating the drive shaft and the hook members in accordance with predetermined motion curves to engage the rear flap at hitting point A (see column 3, line 10, through column 4, line 8), a pulse generator 49 for measuring the angular position of the drive shaft, a photoelectric cell 67 for detecting the rear edge of the blank, and a pulse generator 69 and pulse converter 71 which are described by Genoud as follows:

[t]he generator 69 produces motion curves with regard to the following functions  $\alpha(t)$  for the run or course of travel for the hook member;  $d\alpha/dt$  for the speed of the hook member; and  $d^2\alpha/dt^2$  for the rate of acceleration for the hook member. The values of these curves, either from FIGS. 3 or 4, are then sent to a pulse convertor 71, which converts them into the information which is acceptable by the drive motor 47 [column 5, lines 27 through 35].

In Genoud's method of determining when to trigger a hook for folding a back flap of a moving carton such that the hook strikes the back flap at a strike point for folding, each of the motion curves shown in Figures 3 and 4, which display velocity, acceleration and phase positioning (or course) data representing a pattern of rotation of a hook member, constitutes a cam profile as recited in claim 1. Genoud's production of a motion curve by the generator 69 would have suggested the recited step of receiving a cam profile representing a pattern of rotation of the hook from a start position to an ending position in order to strike the back flap at the strike point and to fold the back flap. Genoud's conversion by the converter 71 of the motion curve into information acceptable by the drive motor 47 would have suggested the recited step of automatically generating from the cam profile a cam cycle representing electronic control signals for velocity, acceleration and phase positioning of a motor controlling the hook in order to execute the cam profile.

Although Genoud does not explicitly describe a step of storing the cam cycle for use in controlling rotation of the hook to fold the back flap as broadly recited in claim 1, such would have been a common sense and obvious measure, if not an inherently necessary one, to effect controlled rotation of the hook. In this regard, one of ordinary skill in the art would have readily appreciated that the information produced by Genoud's converter 71 would have to be stored, however briefly and temporarily, to enable it to be conveyed to the drive motor 47.

Thus, Genoud alone ostensibly would have suggested the subject matter recited in claim 1. To the extent that Genoud might arguably fall short in this regard, Reuteler more than makes up for any perceived deficiencies.

Reuteler discloses a wheel assembly for opening carton blanks moving through a packaging apparatus. The wheel assembly "includes three pairs of equally spaced arms extending radially away from a central longitudinal shaft, each pair of arms supporting a connecting shaft with at least one suction cup thereon" (column 4, lines 50 through 53). The wheel assembly also includes "a drive motor and a control processor in which an electronic cam profile, or series of cam profiles, is stored for operating the drive motor" (column 5, lines 4 through 7).

According to Reuteler (see columns 3 through 5; and column 10, lines 28 through 42), this arrangement affords a high degree of flexibility in adapting the packaging apparatus for carton blanks of various sizes and shapes. As described in more detail in the reference,

[i]n conventional fashion, packaging machine 7 will be provided with a control processor 61 (FIG. 4), not illustrated, for automatically controlling the operation of carton feed opening wheel assembly 5, as well as the additional components of the packaging machine. It is anticipated that the control processor will be an IBM PC compatible computer having an internal computer-readable medium with a series of preprogrammed electronic cam data profiles 62 (FIGS. 4, 6) stored therein, as well as the control program operating packaging machine 7, and/or that the control processor will be provided with a device for reading a computer-readable medium, for example, a floppy disk drive or a CD ROM drive, so that it may receive the appropriate preprogrammed data and control programming operations to operate carton feed opening wheel assembly 5 in conjunction with packaging machine 7. Thus, in FIG. 6 three different illustrative electronic cam profiles 62A, 62B, and 62C are shown, each of the cam profiles being stored as preprogrammed data within the control processor and the computer-readable media made available to the control processor.

In FIG. 6 the vertical axis of the graph shows the rotational angle of carton opening wheel 30 during a single carton opening cycle, as shown in FIGS. 5A-5E. The operation of carton feed opening wheel assembly 5 for one carton opening cycle with respect to the rotational angle of carton opening wheel 30 is shown along the bottom horizontal axis of FIG. 6.

The three illustrative cam profiles, denoted by the reference characters 62A, 62B, 62C, serve to show the control methodology used in operating servomotor 47 for rotating wheel frame 34 about central longitudinal shaft 35 [column 9, lines 32 through 64].

Reuteler's teaching of the flexibility benefit afforded by the computer-based control processor for automatically controlling the operation of the carton feed opening wheel assembly would have provided the artisan with ample motivation or suggestion to adapt a similar system to automatically control the operation of Genoud's rear flap folding apparatus, and more particularly to control the motor 47 for rotating the drive shaft and hook members, in the manner set forth in claim 1.

Hence, the combined teachings of Genoud and Reuteler warrant a conclusion that the differences between the subject matter recited in claim 1 and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. Therefore, we shall sustain the standing 35 U.S.C. § 103(a) rejection of claim 1, and claims 2 through 10, 12 through 21 and 32 which stand or fall therewith, as being unpatentable over Genoud in view of Reuteler. Because our reasoning differs from that employed by the examiner, however, we designate the sustained rejection as a new ground of rejection under 37 CFR § 1.196(b) to afford the appellants a fair opportunity to react thereto.

SUMMARY

The decision of the examiner to reject claims 1 through 10, 12 through 21 and 32 is affirmed, with the affirmance designated as a new ground of rejection under 37 CFR § 1.196(b).

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).



Appeal No. 2002-2230  
Application 09/295,547

AFFIRMED; 37 CFR § 1.196(b).

IRWIN CHARLES COHEN	)	
Administrative Patent Judge	)	
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